THAT WHICH IS CLAIMED:

1. A method for capturing optical image data from an image signal executed by a central processor that is additionally responsible for executing the operating system and application program of the image capture device, the method comprising:

generating an image capture signal;

assigning, at the central processor, in response to an image capture signal, a memory address for the image data to be assembled;

receiving, at an image capture device, optical image data from an imager;

assembling the image data at the image data assembler under control of the central processor;

storing the assembled image data in memory in accordance with the assigned memory address; and

decoding the assembled image data and executing the application program at the central processor, whereby the optical image is captured, decoded and processed by the central processor.

2. The method of Claim 1, wherein the step of assigning a memory address for the image data to be assembled further comprises invoking the image capture device under control of the central processor to begin the image data assembly process.

3. The method of Claim 1, wherein assembling the image data further comprises invoking a transfer controller under control of the central processor.

4. The method of Claim 1, wherein assembling the image data further comprises invoking an image builder module to begin an image data assembly process.

5. The method of Claim 3, wherein the step of assembling the image data is initiated upon receipt of a signal from the transfer controller.

6. The method of Claim 3, wherein the transfer controller transfers the memory address for the image data to memory for receipt of the assembled image data.

7. The method of Claim 1, wherein assembling the image data comprises invoking a programmable logic device remote from the central processor.

8. The method of Claim 1 wherein receiving optical image data comprises receiving optical image data in segments.

9. The method of Claim 1, wherein assembling the image data comprises invoking an image builder module to assemble image data into larger image data components.

10. The method of Claim 3, wherein assembling the image data further comprises invoking the transfer controller to coordinate transfer of the assembled image data to memory.

11. The method of Claim 3, wherein assigning, at the central processor, a memory address to the assembled image data further comprises gaining control of an image request line upon completion of an image data block to initiate an image data transfer to memory.

12. The method of Claim 1 further comprising generating an end of frame signal after the image data components are stored.

13. The method of Claim 1 further comprising accessing the assembled image data in memory for decoding after the image data is assembled.

14. The method of Claim 1 further comprising executing the application program after the image data has been decoded.

15. The method of Claim 3, wherein assigning a memory address to the assembled image data further comprises communicating the memory address via the transfer controller.

16. The method of Claim 1, wherein storing the assembled image data in system memory further comprises gaining control of the data bus in communication with

the image data assembler and the memory module and transferring assembled image data to system memory.

17. The method of Claim 4, wherein assembling the image data further comprises invoking an image builder in response to assigning, at the central processor, a memory address for the image data.

18. The method of Claim 3, wherein invoking a transfer controller comprises invoking a programmable logic device.

19. The method of Claim 4, wherein invoking an image builder module comprises invoking a programmable logic device.

20. The method of Claim 1 wherein the step of assembling the image data comprises assembling the image data under control of the central processor and an image builder module.

21. The method of Claim 1 wherein the step of storing the assembled image data in memory comprises storing the assembled image in memory under control of the central processor or a transfer controller.

22. The method of Claim 1 wherein the step of assigning a memory address comprises assigning a beginning memory address.

23. An imaging device for capturing optical image data from an image signal, the device comprising:

an imager for generating image data segments;

an image data assembler under control of the central processor that receives image data segments and assembles image data components;

a memory module that receives assembled image data components from the image data assembler and stores the assembled image data components according to an assigned memory address; and

a central processor that executes the image capture process and the device operating system and application program of the image capture device, whereby the optical image is captured, decoded and processed under control of the central processor.

24. The imaging device of Claim 23, wherein the image data assembler comprises an image builder module that receives image data segments.

25. The imaging device of Claim 23, wherein the image data assembler comprises a transfer controller that receives signals from the central processor.

26. The imaging device of Claim 25, wherein the transfer controller invokes an image builder module in response to a signal from the central processor.

27. The imaging device of Claim 25, wherein the transfer controller invokes the image builder module in response to a signal from the central processor designating a memory address for the image data that is to be assembled.

28. The imaging device of Claim 23, wherein the image data assembler comprises a transfer controller that invokes the image builder module to begin the image assembly process.

29. The imaging device of Claim 23, further comprising means for generating an image capture signal, wherein the central processor generates a memory address for the image data to be assembled in response to an image capture signal.

30. The imaging device of Claim 23, wherein the image data assembler comprises a programmable logic device.

31. The imaging device of Claim 25, wherein the transfer controller comprises a programmable logic device.

32. The imaging device of Claim 23, wherein the central processor executes decoding of the image data upon transfer from the memory module.

33. The imaging device of Claim 23, wherein the central processor, the image data assembler and the memory module are located on the same printed circuit board.

34. The imaging device of Claim 25, wherein the transfer controller assigns the memory address for the image data to memory for receipt of the assembled image data.

35. The imaging device of Claim 25, wherein said transfer controller initiates a transfer of the assembled image data components to memory.

36. The imaging device of Claim 23, wherein said image data assembler generates an end of frame signal after the image data components are assembled.

37. The imaging device of Claim 23, wherein said central processor further initiates a transfer of the image data for decoding after the image data components are assembled.

38. The imaging device of Claim 23, wherein said image data assembler communicates the memory address to the memory module.

39. The imaging device of Claim 23, wherein said image builder module comprises a programmable logic device.

40. The image device of Claim 23 wherein the memory module stores the assembled image data components according to a memory address assigned by a transfer controller.